GCCS Engineering
Year 2000 Developer Guidance

Purpose:
The purpose of this meeting is to advise of the requirements for meeting Year 2000(Y2K) compliance. The Joint Staff and D6 have directed that GCCS be fully Y2K compliant by September 1998. Compliance means that segments correctly calculate the leap year and correctly handle date fields that are passed to it through software or hardware interfaces. The initial developer guidance will include a background of the Y2K problem, schedule, revised segment registration process and a sample Y2K compliance checklist.

Objective:
The objective is to meet Federal requirements for Y2K and related issues as stated in the Federal Acquisition Regulation, Part 39.002 published in Federal Acquisition Circular (FAC) 90-45 states compliance to be:

> "Year 2000 compliant" means information technology that accurately processes date/time data (including, but not limited to, calculating, comparing, and sequencing) from, into, and between the twentieth and twenty-first centuries and the years 1999 and 2000 and leap year calculations. Furthermore, Year 2000 compliant information technology, when used in combination with other information technology, shall accurately process date/time data if the other information technology properly exchanges date/time data with it.

The "Y2K problem" will occur because developers used 1 or 2 digits rather than 4 digits to represent a year. When the Year 2000 arrives, non-compliant systems won't be able to differentiate between the year 1900 and the year 2000. An additional problem to address is the fact that the year 2000 is a leap year, which is inconsistent with the normal calendar year at the turn of a century. Leap year calculations must be done as follows:

> "Years divisible by 4 are leap years, except that years divisible by 100 are not leap years, except that years divisible by 400 are leap years."

Developers must incorporate Y2K compliance checking into their pre-delivery segment testing. A sample Y2K Compliance Checklist is included in Attachment A. This checklist is not all-inclusive but does provide a good starting point for Y2K testing.

Schedule:

Developer Guidance	20 November 1997
Engineering delivers final Y2K Compliance Checklist to developers	5 January 1998
DII-COE Delivers fully compliant COE	5 January 1998
Y2K Compliant Segment Registration begins	19 January 1998
Y2K Compliant Segment Delivery begins (GCCS 3.0 Stage II)	5 February 1998
Y2K Compliant Segments Re-delivery begins (GCCS 3.2 Y2K)	5 February 1998
All Y2K Compliant Segments have been Delivered	30 June 1998

GCCS Engineering
Year 2000 Developer Guidance

Developer's Responsibilities:

Segment registration will be required prior to segment delivery. The registration will be performed via the Internet. The registration questions will be expanded to include the following information:

Identify and describe external/internal interfaces and dependencies.

- External interfaces include any application or system outside of the GCCS arena that a segment shares data with or uses for data transfer (i.e. Army, Navy systems etc).
- The internal interfaces include any other segments within GCCS that are contacted, i.e. COE APIs, other Oracle based applications, Oracle to other databases, TADIL interfaces and feeds, MDX feeds, serial MDX feeds, Solaris to HP, etc. See Attachment A for an example.
- Segment dependencies include any application or platform that is required for the segment to work correctly (i.e. DII-COE, client-server relationship, etc.). For example, if a segment uses the system clock to get time data this should be noted.
- Fully describe each identified interface including format, medium, etc.

When a segment is delivered to configuration management, the developer must provide proof of Y2K compliance.

Provide Proof of Y2K Compliance.

- The developer may use test plans or procedures to verify compliance. The method used to prove compliance will be left up to the developer, however, the developer must include methods used to deal with leap year calculations and a strategy for date validation and verification (see Attachment B for a template of all necessary items to test). The date validation and verification must prevent non-compliant systems from contaminating a compliant system via interfaces with other computer systems.
- Describe where dates are stored, displayed, and manipulated within your segment.

Recommendation:

All developers should begin to incorporate the GCCS Y2K checklist (Attachment A) into their normal testing procedures to ensure that all segments are compliant.

Future Plans:

GCCS engineering will develop a specific Y2K checklist similar in format to the Integration checklist. This checklist will be delivered to developers prior to the acceptance of compliant Y2K segments.

GCCS Engineering
Year 2000 Developer Guidance

POCs:
1Lt Joe Pearson, USAF, GCCS Y2K Engineer
(703)735-8657, DSN 653-8675, pearsonj@ncr.disa.mil
Teresa Odenwald, SAIC, System Engineer
(703)735-8953, DSN 653-8953, odenwalt@ncr.disa.mil

Sources:
Sun Software Y2000 Developer's Guide
"GCCS Interfaces and the Year 2000," April 25, 1997.
"DoD Year 2000 Management Plan," April 1997.
"Year 2000 Assessment Checklist," SEPO: Y2Kchek3.doc.